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NEW HAMPSHIRE
AGRICULTURAL EXPERIMENT STATION
DEPARTMENT OF AGRONOMY

Results of Seed Tests

For 1913

MADE FOR THE
STATE BOARD OF AGRICULTURE

BY F. W. TAYLOR and FRANK APP

NEW HAMPSHIRE COLLEGE
OF
AGRICULTURE AND THE MECHANIC ARTS,
DURHAM, N. H.

NEW HAMPSHIRE COLLEGE OF AGRICULTURE AND THE MECHANIC ARTS.

NEW HAMPSHIRE AGRICULTURAL EXPERIMENT STATION

DURHAM, N. H.

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The bulletins of the Experiment Station are published at irregular intervals and are sent *free* to all residents of New Hampshire requesting them.

SEED TESTS

MADE DECEMBER 1, 1912, TO SEPTEMBER 1, 1913.

The provisions of the Pure Seed Law enacted by the General Court in 1909 require the publication annually of a bulletin by the New Hampshire Experiment Station of the results of all seed tests made officially during the previous year. The administration of said law was placed in the hands of the secretary of the State Board of Agriculture, who appointed the writer, agronomist of the experiment station, as his regular agent for making all tests and analyses in this state.

During the year, or rather the nine months' period from December 1 to September 1, only thirty-four samples were voluntarily sent in for analysis as against fifty-five for 1912, seventy-eight for 1911 and two hundred and thirty-eight for 1910. In addition to these thirty-four samples the fertilizer collector secured and sent in seventy-three samples, making a total of one hundred and seven analyzed during the nine months. These seventy-three samples were taken from seeds being offered for sale and were collected from thirty-one dealers in twenty-five different towns representing each of the ten counties of the state. These samples included two of alfalfa, three of alsike clover, twenty-two of seed corn, two of Hungarian, nine of millet, nine of seed oats, seven of red clover, three of redtop and sixteen of timothy. A summary table showing the results of the examination of these seventy-three samples will be found on pages 4 and 5.

The writers wish to acknowledge their appreciation of the careful and efficient work of Mr. C. E. Roberts, who assisted in making the tests and examinations of the samples herewith reported.

SUMMARY TABLE SHOWING RESULTS OF EXAMINATION OF SAMPLES OF SEED OBTAINED BY THE COLLECTOR FOR THE YEAR 1913.

No.	Kind of Seed, Brand, Name and Address of Seller.	Percent Purity		Percent Germination	
		Found	Guaranteed	Found	Guaranteed
395	ALFALFA, (*White Mt.*) Holbrook-Marshall Co., Nashua.	99.7	99.5	90.0	92.0
411	ALFALFA, (*Turkestan*) S. A. Schurman & Son, Portsmouth.	99.3	94.0	94.0	92.0
393	ALSIKE CLOVER McQuestion & Co., Nashua.	99.3	97.8	89.0	97.2
437	ALSIKE CLOVER, (*Mastiff*) Abbott Grocery Co., Keene.	99.4	97.0	93.0	92.0
468	ALSIKE CLOVER W. H. Whitcomb, Canaan.	98.8	96.0	92.5	93.0
405	CORN, (*Improved Leaming No. 2961*) W. C. Dennison, Hillsborough.	.....	.....	90.0	.....
406	CORN, (*Sanford No. 2658*) W. C. Dennison, Hillsborough.	.....	.....	82.0	.....
427	CORN, (*Improved Leaming*) E. W. Huntley, Charlestown.	.....	.....	90.0	.....
443	CORN, (*Leaming*) F. W. Moore, Laconia.	.....	.....	85.0	.....
444	CORN, (*Leaming*) E. T. Willson, Farmington.	.....	.....	90.0	.....
445	CORN, (*Improved Leaming*) J. Jones & Son, Alton.	.....	.....	84.0	.....
446	CORN, (*Sanford*) J. Jones & Son, Alton.	.....	.....	66.0	.....
447	CORN, (*Cuban Giant*) F. H. Moore, Laconia.	.....	.....	90.0	.....
448	CORN, (*Sanford*) F. H. Moore, Laconia.	.....	.....	82.0	.....
449	CORN, (*St. Charles*) E. T. Willson, Farmington.	.....	.....	90.0	.....
459	CORN, (*Sanford*) F. P. Brown, Whitefield.	.....	.....	69.0	.....
461	CORN, (*Sanford*) G. E. Smith, Warren.	.....	.....	94.0	92.0
462	CORN, (*Sanford*) C. P. Stevens, Franklin.	.....	.....	96.0	.....
463	CORN, (*Leaming*) C. P. Stevens, Franklin.	.....	.....	83.0	.....
464	CORN, (*Red Cob*) E. H. Bryant, Tilton.	.....	.....	92.0	.....
465	CORN, (*Stowell's*) E. H. Bryant, Tilton.	.....	.....	90.0	.....
466	CORN, (*Pride of the North*) E. H. Bryant, Tilton.	.....	.....	90 0	.....
471	CORN, (*Eureka*) J. H. Haskell, Claremont.	.....	.....	87.0	.....
472	CORN, (*Sanford*) J. B. Varick Co., Manchester.	.....	.....	98.0	98.0
473	CORN, (*Early Mastodon*) J. B. Varick Co., Manchester.	.....	.....	84.0	85.0
474	CORN, (*Improved Leaming*) J. B. Varick Co., Manchester.	.....	.....	88.5	92.0
477	CORN, (*Leaming*) Moulton & Clark, Lisbon.	.....	.....	84.0	90.0
409	HUNGARIAN W. C. Dennison, Hillsborough.	99.4	98.0	85.5	88.0
434	HUNGARIAN, (*Old Home*) Abbott Grocery Co., Keene.	99.2	98.0	75.5	89.0
391	MILLET, (*Japanese*) O. B. Tilton, Nashua.	99.1	.....	88.5	.....
392	MILLET, (*Hungarian*) McQuestion & Co., Nashua.	99.2	98.0	89.0	99.0
396	MILLET, (*Golden*) O. B. Tilton, Nashua.	99.6	.....	85.5	.....
407	MILLET, (*Japanese*) W. C. Dennison, Hillsborough.	99.7	98.0	98.5	97.0
414	MILLET, (*German*) S. A. Schurman & Son, Portsmouth.	99.4	96.0	82.0	81.0
431	MILLET, (*Japanese*) Ball & Ripley, Winchester.	99.0	90.0	90.0	91.0
439	MILLET, (*German*) J. B. Varick Co., Manchester.	99.8	99.0	96.0	94.0

SEED EXAMINATION, 1913.—*Continued.*

No.	Kind of Seed, Brand, Name and Address of Seller.	Percent Purity		Percent Germination	
		Found	Guaranteed	Found	Guaranteed
441	MILLET, (*Hungarian*) J. H. Haskell, Claremont.	99.5	97.0	92.0	92.0
467	MILLET, (*Japanese*) C. M. Merrill & Son, Bristol.	90.5	85.0	78.0	90.0
387	SEED OATS, (*White Mt.*) F. I. Webber, Rochester.	99.8	99.0	98.0	97.0
421	OATS G. H. Ames & Co., Keene.	....	... .	97.0	.....
422	OATS J. B. Varick Co., Manchester.	.....	.....	86.5	.....
457	SEED OATS, (*Welcome*) J. H. Haskell, Claremont.	98.5	.....	92.0	.....
458	SEED OATS W. B. Blaisdell, Wolfeboro.	99.5	.....	99.0	.....
475	OATS W. H. Whitcomb, Canaan.	97.6	.....	94.0	.....
476	SEED OATS H. L. Bailey, Enfield.	99.6	.....	98.5	.....
478	SEED OATS E. E. Hodgdon, No. Conway.	97.6	.....	2.5	.....
479	SEED OATS, (*Company Sample*) E. E. Hodgdon, No. Conway.	99.7	.....	78.5	.....
385	RED CLOVER, (*Fancy*) F. I. Webber, Rochester.	98.0	97.0	96.0	97.0
398	RED CLOVER, (*Extra Fancy*) O. B. Tilton, Nashua.	99.8	99.5	93.0	93.0
410	RED CLOVER, (*Pan American*) H. A. Yeaton & Son, Portsmouth.	99.0	98.0	86.0	.....
428	RED CLOVER, (*Old Home*) Abbott Grocery Co., Keene.	98.0	97.0	95.0	93.0
450	RED CLOVER W. B. Blaisdell, Wolfeboro.	97.7	98.0	95.5	.....
456	RED CLOVER, (*Eureka*) F. W. Huntley, Charlestown.	98.7	99.7	96.5	.....
470	RED CLOVER W. L. Whitcomb, Canaan.	96.8	98.0	90.0	94.0
394	RED TOP, (*Fancy No. 1*) W. F. Peel, Nashua.	96.8	... .	74.5	.....
402	RED TOP, (*White Mt.*) O. B. Tilton, Nashua.	97.8	95.0	84.5	93.0
413	RED TOP, (*Fancy*) S. A. Schurman & Son, Portsmouth.	97.8	98.0	70.0	.....
386	TIMOTHY, (*Bay State*) F. I. Webber, Rochester.	99.3	99.5	89.0	.....
399	TIMOTHY, (*White Mt.*) O. B. Tilton, Nashua.	99.8	99.6	93.0	97.0
412	TIMOTHY, (*Pan American*) H. A. Yeaton & Son, Portsmouth.	99.7	99.5	90.0	.....
429	TIMOTHY, (*Old Home*) Abbott Grocery Co., Keene.	98.4	97.4	94.0	94.0
430	TIMOTHY Ball & Ripley, Winchester.	98.2	96.0	92.0	92.0
432	TIMOTHY, (*Pine Tree*) E. J. Hanna, West Swanzey.	99.6	.....	93.0	.....
433	TIMOTHY, (*Gold Medal*) F. W. Huntley, Charlestown.	96.6	99.6	90.0	.....
436	TIMOTHY, (*Mastiff*) Abbott Grocery Co., Keene.	99.5	99.5	95.5	95.0
438	TIMOTHY J. B. Varick Co., Manchester.	99.5	99.5	93.0	96.0
440	TIMOTHY, (*Prime.*) J. B. Varick Co., Manchester.	98.4	98.0	98.5	99.0
442	TIMOTHY, (*Pine Tree*) J. B. Varick Co., Manchester.	99.8	99.5	96.5	95.0
451	TIMOTHY, (*Keystone Fancy*) E. F. Brown, Ossipee.	99.2	99.0	96.0	.....
452	TIMOTHY, (*63603*) W. B. Blaisdell, Wolfeboro.	99.5	99.0	95.0	.....
453	TIMOTHY, (*White Square Deal*) O. L. & C. A. White, Mountainview.	98.7	98.0	95.5	96.0
455	TIMOTHY, (*Pine Tree*) J. H. Haskell, Claremont.	99.6	.....	98.5	.....
469	TIMOTHY, (*Bison*) C. S. Collins, Bristol.	98.3	97.5	95.0	95.0

SEED EXAMINATION, 1913.

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Per cent. of Pure seed.	Per cent. of Weed seed.	Per cent. of other Grass seeds.	Per cent. of Inert Matter.	Per cent. of Germination.
373	TIMOTHY, (*Pine Tree*) Earle Warren, Westmoreland Depot, N. H. Jan. 15, 1913. Lady's Thumb, 454; Sedge, 227.	99.8	trace	trace	.2	96.5
374	TIMOTHY, (*Bison*) Earle Warren, Westmoreland Depot, N. H. Jan. 15, 1913. Peppergrass, 1716; Pigweed, 227; Red Clover, 2,724; Red Top, 3,405; Ruggles Plantain, 454; Sorrel, 454; False Flax, 227.	98.5	.3	.5	.7	92.5
375	TIMOTHY, (*Mastiff*) Earle Warren, Westmoreland Depot, N. H. Feb. 11, 1913. Docks, 272; Lady's Thumb, 4,624; Peppergrass, 454; Red Clover, 272.	99.3	trace	.3	.4	95.0
376	TIMOTHY, (*Old Home*) Earle Warren, Westmoreland Depot, N. H. Feb. 11, 1913. Green Foxtail, 272; Red Clover, 1,360.	99.0	trace	.2	.8	84.0
377	CORN, (*Sanford*) Holbrook Grocery Co., Keene, N. H. March 17, 1913. Barley, 30; Wheat, 30.	99.6	.....	.4	trace	94.0
378	OATS, (*E. M.*) Holbrook Grocery Co., Keene, N. H. March 25, 1913.	.....	.....	.....	.....	83.0
379	OATS, (*110*) Holbrook Grocery Co., Keene, N. H. March 31, 1913. Barley, 22; Charlock, 44; Pigweed, 22; Sorrel, 44; Unknown, 22.	95.4	.1	trace	4.5	78.0
380	OATS, (*111*) Holbrook Grocery Co., Keene, N. H. March 31, 1913. Green Foxtail, 30; Barley, 30; Charlock, 120; Sorrel, 30; Wheat, 60.	90.4	.1	.4	9.1	72.0
381	OATS, (*112*) Holbrook Grocery Co., Keene, N. H. March 31, 1913.	96.7	.....	.....	3.3	99.0
382	OATS, (*113*) Holbrook Grocery Co., Keene, N. H. March 31, 1913.	99.7	.....	.....	.3	99.0
383	SWEET CORN, (*Golden Bantam*) C. L. Jenness, Dover, N. H. April 7, 1913.	.....	.....	.....	.....	61.5
384	WHITE OATS, (*Chicago No. 2, Recleaned*) Stratton & Co., Concord, N. H. April 27, 1913.	99.3	.....	.....	.7	98.0
385	RED CLOVER, (*Fancy*) F. I. Webber, Rochester, N. H. April 28, 1913. Green Foxtail, 1910; Ribgrass, 1,001; Timothy, 6,916.	98.0	.5	.5	1.0	96.0
386	TIMOTHY, (*Bay State*) F. I. Webber, Rochester, N. H. May 12, 1913.	99.3	.....	.....	.7	89.0
387	SEED OATS, (*White Mt.*) F. I. Webber, Rochester, N. H. April 28, 1913.	99.8	.. ...	.....	.2	98.0
388	SEED OATS, (*White Mt.*) Holbrook Grocery Co., Keene, N. H. April 21, 1913.	99.9	.....	.....	.1	96.0
389	OATS, (*Commercial No. 112*) Holbrook Grocery Co., Keene, N. H. April 28, 1913. Black Mustard, 90; Green Foxtail, 30; Wild Buckwheat, 60.	99.1	trace	.....	.9	65.5
390	OATS, (*Commercial No. 113*) Holbrook Grocery Co., Keene, N. H. April 28, 1913. Black Mustard, 90; Green Foxtail, 60; Lady's Thumb, 30; Wild Buckwheat, 60.	99.0	.1	.....	.9	84.5
391	MILLET, (*Japanese*) O. B. Tilton, Nashua, N. H. April 28, 1913. Lady's Thumb, 91; Pigweed, 455; Ragweed, 455; Unknown, 91.	99.1	.5	.....	.4	88.5

SEED EXAMINATION, 1913.—*Continued.*

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Per cent. of Pure seed.	Per cent. of Weed seed.	Per cent. of other Grass seeds.	Per cent. of Inert Matter.	Per cent. of Germination.
392	HUNGARIAN McQuestion & Co., Nashua, N. H. May 7, 1913. Black Mustard, 182; Lady's Thumb, 546; Wild Buckwheat, 273.	99.2	.5	.....	.3	80.0
393	ALSIKE CLOVER McQuestion & Co., Nashua, N. H. May 20, 1913. Canada Thistle, 227; Pigweed, 227; Ribgrass, 227; Sorrel, 454.	99.3	.2	.2	.3	89.0
394	RED TOP, (*Fancy No. 1*) W. F. Peel, Nashua, N. H. April 28, 1913.	96.8	.....	.....	3.2	74.5
395	ALFALFA, (*White Mt.*) Holbrook-Marshall Co., Nashua, N. H. April 28, 1913.	99.7	.....	.....	.3	90.0
396	MILLET, (*Golden*) O. B. Tilton, Nashua, N. H. April 29, 1913. Kentucky Bluegrass, 91; Lamb's Quarters, 91.	99.6	trace	.....	.4	85.5
397	OATS E. C. & W. L. Hopkins, Greenfield, N. H. April 28, 1913.	.....	.....	.....	.....	93.5
398	RED CLOVER, (*Extra Fancy*) O. B. Tilton, Nashua, N. H. May 12, 1913.	99.8	.....	.....	.2	93.0
399	TIMOTHY, (*White Mt.*) O. B. Tilton, Nashua, N. H. May 12, 1913. Kentucky Bluegrass, 1,362; White Clover, 227.	99.8	.1	.....	.1	93.0
400	SWEET CORN, (*Golden Bantam No. 1*) C. L. Jenness, Dover, N. H. April 21, 1913.	.....	.....	.....	.....	87.0
401	SWEET CORN, (*Golden Bantam No. 2*) C. L. Jenness, Dover, N. H. April 21, 1913.	.....	.....	.....	.....	52.5
402	RED TOP, (*White Mt.*) O. B. Tilton, Nashua, N. H. May 12, 1913. Yarrow, 1,860.	97.8	trace	.....	2.2	84.5
403	OATS Morris E. Henderson, Merrimack, N. H. April 29, 1913.	.....	.....	.....	.....	88.5
404	BARLEY, (*H. W.*) Holbrook Grocery Co., Keene, N. H. April 29, 1913.	99.1	.....	.....	.9	93.0
405	FIELD CORN, (*Improved Leaming No. 2691*) W. C. Dennison, Hillsborough, N. H. May 7, 1913.	.....	.....	.....	.....	90.0
406	FIELD CORN, (*Sanford No. 2058*) W. C. Dennison, Hillsborough, N. H. May 7, 1913.	.....	.....	.....	.....	82.0
407	JAPANESE BUCKWHEAT W. C. Dennison, Hillsborough, N. H. May 7, 1913. Barnyard Grass, 182; Lamb's Quarters, 91; Bull Thistle, 91; Wild Buckwheat, 91.	99.7	.2	.....	.1	98.5
408	OATS, (*W. J. B. No. 1*) Holbrook Grocery Co., Keene, N. H. April 29, 1913.	99.9	.....	.....	.1	96.5
409	HUNGARIAN W. C. Dennison, Hillsborough, N. H. May 7, 1913. Lady's Thumb, 545; Pigweed, 91; Ragweed, 364.	99.4	.4	.....	.2	85.5
410	RED CLOVER, (*Pan American*) H. A. Yeaton & Son, Portsmouth, N. H. June 12, 1913. Green Foxtail, 364; Pigweed, 91; Ribgrass, 273.	99.0	.2	.....	.8	86.0
411	ALFALFA, (*Turkestan*) S. A. Schurman & Son, Portsmouth, N. H. June 12, 1913. Green Foxtail, 91; Bull Thistle, 91; Ribgrass, 182; Sorrel, 91.	99.3	.2	.....	.5	94.0
412	TIMOTHY, (*Pan American*) H. A. Yeaton & Son, Portsmouth, N. H. June 12, 1913; Kentucky Bluegrass, 227; Shepherd's Purse, 227.	99.7	trace	trace	.3	90.0

SEED EXAMINATION, 1913.—*Continued.*

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Per cent. of Pure seed.	Per cent. of Weed seed.	Per cent. of other Grass seeds.	Per cent. of Inert Matter.	Per cent. of Germination.
413	RED TOP, (*Fancy*) S. A. Schurman & Son, Portsmouth, N. H. June 12, 1913.	97.8	.....	.....	2.2	70.0
414	MILLET, (*German*) S. A. Schurman & Son, Portsmouth, N. H. June 12, 1913. Kentucky Bluegrass, 91; Lady's Thumb, 819, Pigweed, 91.	99.4	.3	trace	.3	82.0
415	BARLEY Gates & Moore, Lisbon, N. H. May 7, 1913. Oats, 120.	99.3	.....	trace	.7	98.0
416	OATS, (*No. 1*) Gates & Moore, Lisbon, N. H. May 7, 1913. Wheat, 60.	99.5	.....	.2	.3	86.0
417	OATS, (*No. 2*) Gates & Moore, Lisbon, N. H. May 7, 1913. Barley, 90; Wheat, 180.	97.3	.....	1.3	1.4	82.5
418	TIMOTHY, (*Sample A*) Bailey & Rogers, Tilton, N. H. May 7, 1913. Kentucky Bluegrass, 454; Red Clover, 227.	99.7	.....	.1	.2	96.5
419	OATS, (*No. 114*) Holbrook Grocery Co., Keene, N. H. May 7, 1913. Green Foxtail, 30; Barley, 60; Wild Buckwheat, 30.	99.2	.....	.5	.3	95.0
420	TIMOTHY, (*Sample B*) Bailey & Rogers, Tilton, N. H. May 7, 1913. Kentucky Bluegrass, 2,448.	99.5	.....	.1	.4	95.5
421	OATS G. H. Ames & Co., Keene, N. H. May 7, 1913.	.....	.....	.....	.....	97.0
422	OATS J. B. Varick & Co., Manchester, N. H. June 12, 1913.	.....	.....	.....	.....	86.5
423	OATS Holbrook Grocery Co., Keene, N. H. May 12, 1913. Barley, 60; Wild Sunflower, 60; Wild Buckwheat, 60; Wheat, 30.	98.9	.7	.2	.2	95.5
424	OATS, (*No. 1*) Holbrook-Marshall Co., Nashua, N. H. May 7, 1913. Wild Buckwheat, 30; Wheat, 30.	99.2	trace	.2	.6	94.5
425	CORN, (*Red Cob*) C. L. Jenness, Dover, N. H. May 7, 1913.	.....	.....	.....	.....	97.0
426	CORN, (*Leaming*) C. L. Jenness, Dover, N. H. May 7, 1913.	.....	.....	.....	.....	90.0
427	CORN, (*Improved Leaming*) F. W. Huntley, Charlestown, N. H. June 12, 1913.	.....	.....	.....	.....	90.0
428	RED CLOVER, (*Old Home*) Abbott Grocery Co., Keene, N. H. June 12, 1913. Docks, 227; Green Foxtail, 1,135; Pigweed, 227; Ribgrass, 681; Sorrel, 454.	98.0	.7	.....	1.3	95.0
429	TIMOTHY, (*Old Home*) Abbott Grocery Co., Keene, N. H. June 12, 1913. Kentucky Bluegrass, 3,632; Peppergrass, 454; Red Clover, 2,951; Sorrel, 227.	98.4	trace	.5	1.1	94.0
430	TIMOTHY Ball & Ripley, Winchester, N. H. June 12, 1913. Kentucky Bluegrass, 2,043; Red Clover, 2,427; Shepherd's Purse, 681.	98.2	trace	.4	1.4	92.0
431	MILLET, (*Japanese*) Ball & Ripley, Winchester, N. H. June 12, 1913. Ragweed, 91; Shepherd's Purse, 273; Mallow, 182; Unknown, 182.	99.0	.4	.....	.6	90.0
432	TIMOTHY, (*Pine Tree*) E. J. Hanna, W. Swanzey, N. H. June 12, 1913. Kentucky Bluegrass, 1,362; Red Clover, 227.	99.6	trace	trace	.4	93.0

SEED EXAMINATION, 1913.—*Continued.*

Sample number.	Kind of Seed, Sender, Date of Report, and Kind and Number of Foreign Seeds found in One Pound.	Per cent. of Pure seed.	Per cent. of Weed seed.	Per cent. of other Grass seeds.	Per cent. of Inert Matter.	Per cent. of Germination.
433	TIMOTHY, (*Gold Medal*) W. Huntley, Charlestown, N. H. June 12, 1913. Kentucky Bluegrass, 681; Shepherd's Purse, 227.	96.6	trace	trace	.4	90.0
434	HUNGARIAN, (*Old Home*) Abbott Grocery Co., Keene, N. H. June 12, 1913. Old Witchgrass, 681; Ragweed, 454.	99.2	.2	.....	.6	75.5
435	OATS, (*No. 115 M. & T.*) Holbrook Grocery Co., Keene, N. H. May 20, 1913. False Buckwheat, 30; Wheat, 150.	99.1	trace	.8	.1	92.0
436	TIMOTHY, (*Mastiff*) Abbott Grocery Co., Keene, N. H. June 23, 1913. Kentucky Bluegrass, 2,951; Red Top, 1,135; Shepherd's Purse, 454.	99.5	trace	.1	.4	95.5
437	ALSIKE CLOVER, (*Mastiff*) Abbott Grocery Co., Keene, N. H. June 23, 1913. Pigweed, 227; Sorrel, 454.	99.4	trace	.2	.4	93.0
438	TIMOTHY J. B. Varick & Co., Manchester, N. H. June 23, 1913; Peppergrass, 227; Unknown, 227.	99.5	trace	.1	.4	93.0
439	MILLET, (*German*) J. B. Varick & Co., Manchester, N. H. June 23, 1913.	99.8	.....	.....	.2	96.0
440	TIMOTHY, (*Prime*) J. B. Varick & Co., Manchester, N. H. June 23, 1913. Kentucky Bluegrass, 4,994; Peppergrass, 1,135; Red Clover, 1,135; Red Top, 1,816.	98.4	trace	.3	.3	98.5
441	MILLET, (*Hungarian*) J. H. Haskell, Claremont, N. H. June 23, 1913. Lamb's Quarters, 2,275; Bull Thistle, 91; Pigweed, 91; Ragweed, 91.	99.5	.5	.....	trace	92.0
442	TIMOTHY, (*Pine Tree*) J. B. Varick & Co., Manchester, N. H. June 23, 1913. Kentucky Bluegrass, 227; Peppergrass, 681; Red Clover, 227; Red Top, 681.	99.8	trace	trace	.2	96.5
443	CORN, (*Leaming*) F. H. Moore, Laconia, N. H. June 23, 1913.	.....	.....	.....	.....	85.0
444	CORN, (*Leaming*) E. T. Willson, Farmington, N. H. June 23, 1913.	.....	.....	.....	.....	90.0
445	CORN, (*Improved Leaming*) J. Jones & Son, Alton, N. H. June 23, 1913.	.....	.....	.....	.....	84.0
446	CORN, (*Sanford*) J. Jones & Son. Alton, N. H. June 23, 1913.	.....	.....	.....	.....	66.0
447	CORN, (*Cuban Giant*) F. H. Moore, Laconia, N. H. June 23, 1913.	.....	.....	.....	.....	90.0
448	CORN, (*Sanford*) F. H. Moore, Laconia, N. H. June 23, 1913.	.....	.....	.....	.....	82.0
449	CORN, (*St. Charles*) E. T. Willson, Farmington, N. H. June 23, 1913.	.....	.....	.....	.....	90.0
450	RED CLOVER W. B. Blaisdell, Wolfeboro, N. H. June 23, 1913. Docks, 182; Green Foxtail, 728; Henbane, 91; Ribgrass, 546; Timothy, 728.	97.7	.4	.1	1.8	95.5
451	TIMOTHY, (*Keystone Fancy*) E. F. Brown, Ossipee, N. H. June 23, 1913. Kentucky Bluegrass, 2,724; Peppergrass, 454; Red Top, 1,362.	99.2	trace	.1	.7	96.0
452	TIMOTHY, (*No. 63603*) W. B. Blaisdell, Wolfeboro, N. H. June 23, 1913. Kentucky Bluegrass, 1,816; Red Clover, 227; Red Top, 681.	99.5	.....	.1	.4	95.0
453	TIMOTHY, (*White Square Deal*) O. L. & C. A. White, Mountainview, N. H. June 23, 1913. Kentucky Bluegrass, 6,583; Peppergrass, 681; Red Clover, 227; Red Top, 2,043.	98.7	trace	.4	.9	95.5

SEED EXAMINATION, 1913.—*Continued.*

Sample number.	Kind of Seed, Sender, Date of Report and Kind and Number of Foreign Seeds found in One Pound.	Per cent. of Pure seed.	Per cent. of Weed seed.	Per cent. of other Grass seeds.	Per cent. of Inert Matter.	Per cent. of Germination.
454	OATS, (*White*) Somersworth Grain Co., Somersworth, N. H. June 2, 1913.	.....	.....	.....	.....	74.0
455	TIMOTHY, (*Pine Tree*) J. H. Haskell, Claremont, N. H. June 23, 1913. Kentucky Bluegrass, 227; Red Top, 2,270.	99.6	.....	.1	.3	98.5
456	RED CLOVER, (*Eureka*) F. W. Huntley, Charlestown, N. H. June 23, 1913. Green Foxtail, 364; Lady's Thumb, 182.	98.7	.2	.....	1.1	96.5
457	SEED OATS, (*Welcome*) J. H. Haskell, Claremont, N. H. June 23, 1913. Wild Buckwheat, 30; Barley, 90.	98.5	trace	.6	.9	92.0
458	SEED OATS W. B. Blaisdell, Wolfeboro, N. H. June 23, 1913. Bindweed, 30; Wheat, 30; Morning Glory, 30.	99.5	.1	.1	.3	99.0
459	CORN, (*Sanford*) F. P. Brown, Whitefield, N. H. June 23, 1913.	.....	.....	.....	.....	69.0
460	CORN W. D. F. Hayden, Dover, N. H. June 16, 1913.	.....	.....	.....	.....	83.5
461	CORN, (*Sanford*) G. E. Smith, Warren, N. H. June 23, 1913.	.....	.....	.....	.....	94.0
462	CORN, (*Sanford*) C. P. Stevens, Franklin, N. H. June 30, 1913.	.....	.....	.....	.....	96.0
463	CORN, (*Leaming*) C. P. Stevens, Franklin, N. H. June 30, 1913.	.....	.....	.....	.....	83.0
464	CORN, (*Red Cob*) E. H. Bryant, Tilton, N. H. June 30, 1913.	.....	.....	.....	.....	92.0
465	CORN, (*Stowells*) E. H. Bryant, Tilton, N. H. June 30, 1913.	.....	.....	.....	.....	90.0
466	CORN, (*Pride of the North*) E. H. Bryant, Tilton, N. H. June 30, 1913.	.....	.....	.....	.....	90.0
467	MILLET, (*Japanese*) C. N. Merrill & Son, Bristol, N. H. June 30, 1913. Barnyard Grass, 364; Lady's Thumb, 91; Wild Buckwheat, 182; Ragweed, 4,095; Yellow Foxtail, 11,375.	90.5	9.2	.....	.3	78.0
468	ALSIKE CLOVER W. H. Whitcomb, Canaan, N. H.	98.8	.....	trace	1.2	92.5
469	TIMOTHY, (*Bison*) C. S. Collins, Bristol, N. H. July 1, 1913. Kentucky Bluegrass, 11,577; Peppergrass, 908; Red Top, 681; Sorrel, 681.	98.3	.1	.6	1.0	95.0
470	RED CLOVER W. H. Whitcomb, Canaan, N. H. July 1, 1913. Crabgrass, 91; Green Foxtail, 910; Lady's Thumb, 182; Lamb's Quarters, 91; Sorrel, 1,092.	96.8	.5	trace	2.7	90.0
471	CORN, (*Eureka*) J. H. Haskell, Claremont, N. H. July 1, 1913.	.....	.....	.....	.....	87.0
472	CORN, (*Sanford*) J. B. Varick & Co., Manchester, N. H. July 1, 1913.	.....	.....	.....	.....	98.0
473	CORN, (*Early Mastodon*) J. B. Varick & Co., Manchester, N. H. July 1, 1913.	.....	.....	.....	.....	84.0
474	CORN, (*Improved Leaming*) J. B. Varick & Co., Manchester, N. H. July 1, 1913.	.....	.....	.....	.....	88.5
475	OATS W. H. Whitcomb, Canaan, N. H. July 1, 1913. Barley, 90; Wheat, 90.	97.6	.....	1.0	2.4	94.0
476	SEED OATS H. L. Bailey, Enfield, N. H. July 1, 1913. Morning Glory, 30.	99.6	trace	.....	.1	98.5
477	CORN, (*Leaming*) Moulton & Clark, Lisbon, N. H. July 1, 1913.	.....	.....	.....	.....	84.0
478	SEED OATS E. E. Hodgdon, No. Conway, N. H. July 1, 1913. Mustard, 30; Barley, 150.	97.6	trace	1.3	1.1	2.5
479	SEED OATS, (*Company Sample*) E. E. Hodgdon, No. Conway, N. H. July 1, 1913.	99.7	.....	.....	.3	78.5

SUMMARY TABLE, SHOWING THE KINDS OF FOREIGN SEEDS FOUND IN SAMPLES EXAMINED IN 1913 AND THE NUMBER OF SAMPLES IN WHICH THEY WERE FOUND.

Names of Foreign Seeds.	Names of Samples Examined.								
	Red Clover.	Alsike Clover.	Alfalfa.	Timothy.	Redtop.	Millet.	Oats.	Barley.	Buckwheat.
Number of Samples Examined	7	3	2	22	3	10	22	2	1
Barley							8		
Barnyard Grass						1			1
Bindweed							1		
Black Mustard						1	2		
Bull Thistle			1						1
Canada Thistle		1							
Charlock							2		
Crab-grass	1								
Docks	2			1					
False Flax				1					
Green Foxtail	6		1	1			2		
Henborn	1								
Kentucky Bluegrass				16		2			
Lady's Thumb	2			2		5			
Lamb's-quarters	1					2			1
Mallow						1			
Miscellaneous or Unknown				1		2	1		
Morning Glory							2		
Oats								1	
Peppergrass				9					
Pigweed	2	2		1		4	1		
Plantain				1					
Ragweed						6			
Red Clover				11					
Redtop				9					
Ribgrass	4	1	1						
Sedge				1					
Shepherd's Purse				4		1			
Sorrel	2	2	1	3			2		
Timothy	2								
Wheat							8		
White Clover				1					
Wild Buckwheat						2	6		
Wild Sunflower							1		
Witch-grass						1			
Yarrow	1								
Yellow Foxtail						1			

TABLE SHOWING RESULTS OF TESTS AND EXAMINATION OF SAMPLES OF SEEDS RECEIVED FROM DECEMBER 1, 1912, TO SEPTEMBER 1, 1913.

Kind of Seed.	Total number of samples received.	For Purity Test.	For Germination.	Purity Test.										Germination Test.			
				Pure Seed.				Foreign Seed.			Inert Matter.						
				Highest percent	Lowest percent	Average percent	Standard percent	Highest percent	Lowest percent	Average percent	Highest percent	Lowest percent	Average percent	Highest percent	Lowest percent	Average percent	Standard percent
Alfalfa	2	2	2	99.7	99.3	99.5	98.0	.2	.2	.2	.5	.3	.4	94.0	90.0	92.0	88.
Alsike Clover	3	3	3	99.4	98.8	99.2	95.0	.4	.2	.3	1.2	.3	.6	93.0	89.0	91.5	78.
Barley	2	2	2	99.3	99.1	99.2	99.0	.....	.....	.....	.9	.7	.8	98.0	93.0	95.5	93.
Buckwheat	1	1	1	99.7	99.7	99.7	.....	2	.2	.2	.1	.1	.1	98.5	98.5	98 5	93.
Corn, (*Field*)	25	.....	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	98.0	66.0	87.1	93.
Corn, (*Sweet*)	4	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	90 0	52.5	72.8	88.
Millet	10	10	10	99.4	90.5	98.5	99 0	9.2	.0	1.2	.6	.2	.3	96.0	78.0	80.2	88.
Oats	28	22	28	99.9	90.4	98.4	99.0	1.3	.0	.3	9.1	.1	1.3	99 0	2.5	86.4	93.
Red Clover	7	7	7	99.8	96.8	98.3	98 0	1.0	.0	0.4	2.7	.2	1.3	96.5	86.0	93.1	88.
Redtop	3	3	3	97.8	96.8	97.5	95.0	.0	.0	.0	3.2	2.2	2.5	84.5	70.0	76.3	78.
Timothy	22	22	22	99.8	96.6	99.1	98.0	.8	.0	.2	1.4	.0	.5	98.5	84.0	93.4	88.
Total	107	72	107														

It will be noted from the table just preceding that only thirty-eight of the seventy-three samples collected were guaranteed for purity and only thirty-four for germination, or in other words, only about fifty per cent. of the seed represented by the samples was being sold according to the law. Since it is impossible to determine by test whether seed corn or seed oats are true to name, a statement of the percentage of purity of these two seeds is relatively unimportant. The percentage of germination of both of them, however, is very important. Only five of the twenty-two samples of seed corn and only one of the nine samples of seed oats were guaranteed as to germination, while none of the corn and only one sample of oats were guaranteed as to purity. Of the forty-two samples of grass seeds all but five or 88 per cent. were guaranteed as to purity, and all but fourteen or 66 per cent. were guaranteed as to germination.

Of the total thirty-eight samples which were guaranteed for purity thirty-two or 84 per cent. were found to be up to the guarantee, the remaining six falling from .2 per cent. to 3 per cent. below. Of the thirty-four samples guaranteed for germination, only sixteen or 47 per cent. were found to be up to the guarantee, the remaining eighteen falling from .5 per cent. to 13.5 per cent. below.

The average per cent. of purity and vitality of the seeds tested this year as compared with those tested last year shows a better degree of purity and a higher germination for this year's seeds. With the exception of millet, all the grass seeds showed a better test than last year. Field corn was much better, and although one sample of oats germinated only 2.5 per cent., the average was higher than in 1912. No samples of very dirty or foul seed were inspected.

THE TEXT OF THE LAW

STATE OF NEW HAMPSHIRE.

IN THE YEAR OF OUR LORD ONE THOUSAND NINE HUNDRED AND NINE.

HOUSE BILL . . . . . NO. 396.

AN ACT

To Regulate the Sale of Agricultural Seeds.

Be it enacted by the Senate and House of Representatives in General Court convened:

SECTION 1. Every lot of agricultural seeds, including seeds of cereals, grasses, forage plants, vegetables, garden plants, and white pine trees, but not including those of other trees, shrubs, and ornamental plants, which is sold, offered, or exposed for sale for seed in bulk or package of one pound or more, within this state, shall be accompanied by a plainly written or printed guarantee, stating first its percentage of purity from foreign seeds and other matter, and second, its percentage of vitality.

SECT. 2. Sellers or dealers in seeds may base their guarantees upon tests or analyses conducted by themselves, their agents, or by the secretary of the State Board of Agriculture or his agents, *provided* that such tests or analyses shall be made in such a manner and under such conditions as the said secretary may prescribe.

SECT. 3. The results of all tests or analyses of seeds made by the said secretary, together with the names and addresses of the persons from whom the samples of seed were obtained, shall be published annually in a bulletin by the New Hampshire College Experiment Station, and biennially in the report of the State Board of Agriculture. The said secretary shall also publish from time to time in the quarterly report of the State Board of Agriculture equitable standards of purity and vitality, together with such information concerning agricultural seeds as may be of public benefit.

SECT. 4. Whoever sells, offers, or exposes for sale or for distribution, within this state, any agricultural seeds heretofore named in this act, without complying with the requirements of sections one and two, or whoever, with intention to deceive, wrongly marks or labels any lot of agricultural seeds, including the seeds of cereals, grasses, forage plants, vegetables, garden plants, and white pine trees, but not including those of other trees, shrubs, and ornamental plants, as pertains to their percentage of purity and vitality, shall be punished by a fine not exceeding one hundred dollars for the first offense, and not exceeding two hundred dollars for each subsequent offense.

SECT. 5. The provisions of the four preceding sections shall not apply to any person growing, selling, offering, or exposing for sale cereals and other agricultural seeds for food.

SECT. 6. The secretary of the State Board of Agriculture shall diligently enforce the provisions of sections one and four of this act, and in his discretion prosecute offenses against the same.

THE OBJECT OF THE LAW

The object of the Pure Seed Law is in substance the same as that of our pure food and fertilizer laws, namely, to have the buyer know just what he is buying. It is intended to provide a means whereby our farmers and other purchasers of seeds may have reliable information, on the basis of which they may protect themselves against the introduction of noxious weeds and against loss through weak or otherwise worthless seeds; also to provide a reasonable protection for careful, conscientious dealers against negligent, designing, or unscrupulous ones.

It is not the purpose or intent of the law to work a hardship on our seed dealers or to hurt their legitimate business, and neither is it intended to require farmers and other growers to purchase seeds of a better quality than they desire.

LABELING

The law does not apply to the common five and ten-cent packages of garden and flower seeds. Only seeds sold in bulk or in packages of one pound or more are subject to the provisions of the law and are required to be accompanied by a guarantee stating their percentage of purity and vitality.

The guarantee or label may be of any form desired by the seller of the seeds, as a tag, sticker, or direct brand upon the container. It must, however, be plainly written or printed, and placed distinctly visible to the purchaser. Each dealer will provide his own labels.

TAKING OF SAMPLES

To secure a fair average sample of a lot or bulk, take small quantities from all of the bags or from different parts of any particular bulk. Mix thoroughly and take out the sample to be inspected. When the seeds are in bags or large bins, the use of a grain sampler is most convenient since this will insure getting seeds from the top, middle, and bottom alike. Since the report of the analysis is based upon the nature of the sample inspected, it is important that the sample be carefully taken.

SIZE AND AMOUNTS OF SAMPLES

The size and amount of the samples necessary for a test will depend upon the size and weight of the seeds. About one half ounce, or a tablespoonful of the smaller grass and vegetable seeds, like alsike and white clover, redtop, lettuce, onions, radish, turnip, etc.; about one ounce or two tablespoonfuls of the larger seeds, like timothy, millet, red clover, alfalfa, rape, etc.; and about four ounces or a small cupful of the cereal grains or vegetable seeds, like oats, barley, corn, peas, beans, etc., should be sent.

SENDING OF SAMPLES

Samples sent to the experiment station for testing should be enclosed in a strong paper envelope and securely fastened. They should not be sent in bottles or glass jars owing to the danger of breakage. When a number of samples are to be sent they should be put up securely in a single package and forwarded either by parcel post or by express. Each sample sent in should be marked as follows:

Name and address of sender.

Date of sending.

Kind of seed.

Brand name (if any), and number of package.

Purity or germination test desired (one or both).

Write a letter stating the number and kind of samples sent so that their receipt may be promptly acknowledged.

Address all samples and communications regarding the same to F. W. Taylor, Experiment Station, Durham, N. H.

TESTS AND EXAMINATIONS

Section two of the law states the provisions under which the tests and analyses shall be made. The Department of Agriculture has appointed F. W. Taylor, agronomist of the experiment station, as the regular agent for making all tests and analyses in this state. The sellers or dealers who desire to base their guarantees upon tests made by themselves or their agents must first secure the approval of the Department of Agriculture of the methods to be used in making the tests, and of the person who is to conduct them.

OTHER INFORMATION

Other publications on the subject of seed testing are as follows:

Circulars Nos. 34 and 35, U. S. Department of Agriculture, Washington, D. C.

Bulletin No. S.1, Canadian Department of Agriculture, Ottawa, Can.

Bulletin No. 152, Maine Experiment Station, Orono, Me.

Bulletin No. 146, Vermont Experiment Station, Burlington, Vt.

Bulletin No. 270, Michigan Experiment Station, East Lansing, Mich.

Circular No. 4, Wisconsin Experiment Station, Madison, Wis.

Bulletin No. 115, Iowa Experiment Station, Ames, Iowa.

Bulletin No. 110, Nebraska Experiment Station, Lincoln, Neb.

Seed Bulletin No. 1, North Dakota Experiment Station, Fargo, N. D.

Bulletin No. 83, Bureau of Plant Industry, Washington, D. C.

Bulletin No. 267, Michigan Experiment Station, East Lansing, Mich.

Bulletin No. 362, New York Experiment Station, Geneva, N. Y.

Bulletin No. 148, Kentucky Experiment Station, Lexington, Ky.

Bulletin No. 111, Bureau of Plant Industry, Washington, D. C.

Farmers' Bulletin No. 260, Division of Publications, Washington, D. C.

Bulletin No. 170, Maryland Experiment Station, College Park, Md.

Bulletin No. 127, Minnesota Experiment Station, St. Paul, Minn.

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